



OVERVIEW

40% power saving
with Optidrive.

Global
Solutions...

wireless control for
hundreds of applications

with Invertek Drives
the solutions start here!

- easy to use and incredible performance
- leading edge design and technology
- highly committed to innovation
- products you can rely on
- global support and suppliers

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COMPANY

INDUSTRIAL REFRIGERATION

Direct PI control saves energy

UK

Over a three month test period, 40% less power was consumed by an industrial refrigeration system controlled by Optidrive. This was in comparison to an identical system running direct on-line with conventional thermostatic control.

In this application, Optidrive is used in conjunction with Optiport, the panel mounted display and control pad with an integral PI control. The PI in the Optiport is linked to temperature sensors in the industrial refrigerators to provide feedback control to the Optidrive. The Optidrive then varies the speed of the compressor to control pressure in the refrigerator system and hence maintain a constant temperature.

This application is just one example of how the ease of use and flexibility of the Optidrive can be extended by combining it with the multi-mode PI feedback control contained in the Optiport.

Key features of the PI feedback control system include:

- Direct PI control, where a reducing feedback signal increases the speed of the Optidrive, benefiting applications such as compressor speed control, flow rate control and temperature control.
- Inverse PI control, where a reducing feedback signal decreases the speed of the Optidrive, is ideally suited to condenser fan control in refrigeration systems and temperature control applications.
- Load control, where the motor current is used for the feedback, allows the motor current to be controlled.

This provides a solution for constant load (torque) applications where high dynamic response is not required. A typical application for this technology would be for tension control in winders.

The PI controller also features anti-windup control in all operating modes and can be used with all forms of feedback transducer.



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